

Remarks

The references of record and the bases of rejection have been carefully studied.

Rejection under 35 U.S.C. § 112:

Claims 1-17 were rejected under 35 U.S.C. § 112 for failing to particularly point out and distinctively claim the subject matter the Applicant regards as the invention. In particular, the Examiner has pointed out that several elements in Claims 1, 3, 16 and 17 appear to lack an antecedent basis. Applicant appreciates the Examiner's helpful suggestions and has amended these Claims accordingly. No new matter is added.

Claim 15 was rejected under 35 U.S.C. § 112 for containing subject matter, which is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 15 recites the limitation: “---including means for restricting the possible adjustment ranges by predetermined limiting values.” Applicant's Specification recites on Page 7, Lines 6-28 and Page 8, Lines 1-3:

In dependence on the type of sensor being used, the relationship between the load exerted by the crop and the measuring signal is determined, and the wanted cleansing setting to be derived therefrom is imaged with the aid of a program or is stored in the form of a table, a characteristic curve or a family of characteristic curves. It is also quite conceivable for the cleansing setting to be derivable from a plurality of detectable influential factors or combinations thereof.

For example, an evaluating unit 8 may be provided on the combine harvester wherein a control signal S/20A, S/20B for setting the wanted sieve opening is calculated by means of a programmed function Φ in dependence on the measuring signal S/4: $\Phi(S/4) \Rightarrow S/20A$ or $S/20B$. As an alternative to calculating the control signals for the adjusting members, provision is made for the evaluating unit 8 to comprise a store in which a plurality of previously determined dependencies between the wanted setting values, here for example, the sieve opening widths or the control signals S/20A, S/20B required therefor, and the measuring signal S/4 are stored in the form of a table

or a characteristic curve or a family of characteristic curves.

It is respectfully believed that to merely place two artificial internal limits on these stored sieve widths when these values are stored table values based on a characteristic curve is relatively simplistic matter for anyone with ordinary skill in the art to artificially limit the end points on this characteristic curve so that it does not go below and beyond certain values. Once you have the table of values forming a characteristic curve, there are numerous methods of performing the task in Claim 15. One way is a simple algorithm that simple replaces values below a certain value with a lower predetermined minimum value. This algorithm would replace values above a certain value with a higher predetermined maximum value. Another method is to look at these table values and merely input this data by hand. It is respectfully believed that the test is based on what an individual with ordinary skill in the art would be able to do based on the patent application. In this case, it would be an extremely simple matter to take a look at this data table of values and set a new minimum and maximum value that is a restricted version of the raw table data.

Therefore, it is now respectfully believed that Claim 15 is sufficiently definite and the rejection under 35 U.S.C. § 112 is overcome.

Rejection under 35 U.S.C. § 102:

Claim 1 was rejected under 35 U.S.C. § 102 as being unpatentable in view of Watt et al. (U.S. Patent No. 5,995,895). Watt et al. discloses: "A control system for controlling a vehicle system **at least** partly in response to an **anticipated** condition along the vehicle's course of travel disclosed herein. (Abstract, Lines 1-3). This is a crucial aspect of Watt et al. This prediction of anticipated conditions is by using geo-referenced maps as required in the "Title of the Invention". Applicant's Invention, in sharp contrast, as defined in Claim 1, requires: "----said combine harvester including at least one sensor whose measuring signal is dependent on the loading to which the combine harvester is subjected by the crop but which is independent of the setting of the cleaning mechanism, wherein the setting of the sieve opening width is effected

automatically in dependence on the measuring signal from the sensor.” Applicant’s Specification, Page 10, Lines 8-13. Therefore, the sensor is a load sensor.

Numeral 80 is Watt et al. is not a sensor but refers to a “---vehicle 10 is equipped with a site-specific core system 80 including a data processing unit (DPU) for receiving, processing and communicating site-specific data.” The sensor listed on Column 14, Lines 14-22 and Lines 31-38 refers to a **position** sensor for the sieve. This is recited as follows: “Control circuit 310 generates control signals applied to drive circuit 342 via lines 344, and receives feedback signals from a **position** sensor 346 via lines 348 to allow for closed-loop control” (Column 14, Lines 19-22). This position sensor that detects the position of the sieve and is not a load sensor. Therefore, it is respectfully believed that proper application of a reference described and claimed in a patent application requires broadly, that the anticipatory device be substantially the same in structure, function and result. In this case, Watt et al. is directed to anticipated geophysical considerations. There is a closed loop system that controls sieve opening and closing but **does not depend** on machine load conditions. It does not appear to disclose a system that regulates sieve opening based on sensed crop loading conditions affecting the combine harvester in real-time. It is respectfully believed that the Applicant’s claim limitations referring to sensing loading should not be ignored.

It is respectfully believed that Watt et al. does not contain any structure referring to the measurement of real-time load conditions and merely uses sensors to detect sieve position and other values that are contrasted to geophysical maps to **anticipate** conditions in the vehicle’s course of travel. **Anticipating conditions** is the exact opposite of measuring load conditions in real time and would teach an individual away from that concept of ascertaining real-time load conditions and adjusting the sieve accordingly. The Supreme Court has held that “teaching away” from the claimed invention by the prior art is an important indication of nonobviousness, not to mention a lack of anticipation. In this case, a sensor that is present for the purpose of sensing the position of a sieve and anticipating course of travel conditions teaches an individual away from a structure that is designed to measure load on a combine harvester and alter the sieve opening based on this real-time sensed data. It is

respectfully believed that teaching away is the antithesis of the art suggesting that the person of ordinary skill go in the claimed direction and is a per se demonstration of lack of prima facie obviousness, not to mention anticipation.

It is respectfully believed that for a valid 35 U.S.C. §102 rejection, the Applicant's Invention must be identically disclosed in a single reference. This is not the case with the use of a core system 80 or a sieve position sensor 332 disclosed in Watt et al. It is respectfully believed that this unique structural and functional difference should not be ignored. There is a ground speed sensor 92; however, a load sensor does not appear to be present in Watt et al.

Therefore, Claim 1 is respectfully believed to overcome the rejection under 35 U.S.C. §102 and is felt to distinguish patentably over Watt et al.

Claims 2, 4-6, 8-12,13 and 16-17 were also rejected under 35 U.S.C. §102 as being unpatentable over Watt et al. Since Claims 2, 4-6, 8-12,13 and 16-17 depend from and have all the limitations of Claim 1, as amended, Claims 2, 4-6, 8-12,13 and 16-17 are felt to distinguish from Watt et al. in the same manner as Claim 1.

Therefore, it is respectfully believed that Claims 1-2, 4-6, 8-12,13 and 16-17 overcome this rejection under 35 U.S.C. §102 and are patentable over Watt et al.

Rejection under 35 U.S.C. §103:

Claim 3 was rejected under 35 U.S.C. §103 as being obvious over Watt et al. in view of Kruse et al. (U.S. Patent No. 4,487,002). Claim 3 depends from and contain all of the limitations of Claim 1, as amended. Therefore, Claim 3 overcomes Watt et al. in the same manner as Claim 1 above. Kruse discloses: “---means for sensing the **mass** of a crop being harvested on the feed conveyor---”. (Claim 1, Column 13, Lines 37-39.) This does not detect the: “---the amount of straw in the feeder housing of the combine harvester.”as found in Applicant's Claim 3. The weight or mass of straw can vary depending on moisture, type of straw and other variables and is not the same thing as the amount of straw. The fact that the crop is funneled into a conveyor and then measured, is not an accurate measure of the actual **amount** of straw in the feeder housing. It is respectfully believed to be axiomatic that a feature not disclosed in either of two references, will not come into being by their combination. It is

respectfully believed that the test is whether it would have been obvious to one of ordinary skill in the art to do what the Applicant has done given the teachings of the prior art References. In this case, there are no teachings where the amount of straw in **the feeder housing** is measured. It is respectfully believed that what is obvious is only that which can be deduced from a logical step-by-step reasoning process from the premises furnished in the prior art.

Therefore, it is respectfully believed that Claim 3 overcomes this rejection under 35 U.S.C. §103 and is patentable over Watt et al. in view of Kruse et al.

Claim 7 was rejected under 35 U.S.C. §103 as being obvious over Watt et al. in view of Herlitzius et al. (U.S. Patent No. 5,775,072). Claim 7 depends from and contains all of the limitations of Claim 1, as amended. Therefore, Claim 7 overcomes Watt et al. in the same manner as Claim 1 above. Herlitzius discloses in Column 3, Lines 16-44:

Optimum operation of the harvesting machine 10 is understood to require adjustments with which the harvested crop is processed and separated into its individual components (clean grain, straw, chaff) in such a way that the highest possible output per unit of area, a maximum amount of clean grain, is obtained. In order to attain this optimum operation a certain relationship must be maintained between the mechanical processing of the crop (threshing), the width of the sieve opening, and the blower output depending upon the crop variety, condition of crop, degree of cleanliness, vehicle speed, slope inclination and other factors. Since the aforementioned conditions can often change even in a single field, it is necessary to change the current adjustments to comply with the current conditions.

Air flow through the cleaning shoe is fundamentally controlled by the rotational speed of the blower 36. Air flow represents a significant factor in determining cleanliness of the grain, and in determining grain losses. The illustrated embodiment concentrates on varying the rotational speed of the blower 36. For this purpose, the blower 36 is driven by an infinitely variable belt drive, not shown, that is adjusted by an electric motor.

The speed of the blower is controlled by an adjusting signal. By automatically controlling the speed of the blower, the mass of the crop located on the cleaning shoe 34 experiences an optimum separation into clean grain and chaff, thereby achieving a high degree of cleanliness and low grain losses.

Although the sieve size is listed as a controlled variable, it is respectfully believed not dependent on fan speed and there is not the slightest hint or inference providing a causal link or control between these two values. Moreover, there does not appear to be the slightest hint or suggestion allowing the sieve size to change based on the rotational speed of the fan.

What is obvious is only that which can be deduced by the logical step-by-step reasoning process furnished by the prior art. When no control is provided to change the sieve size and it is only listed as one of the factors affecting crop processing, even with hindsight reasoning based on the Applicant's Specification, it is respectfully believed that this invention was not rendered obvious based on the prior art. In addition, when evaluating a claim for determining obviousness, all limitations of the claims must be evaluated. In this case, neither Watt et al. nor Herlitzius et al. discloses altering the opening width of the sieve based on the rotational speed of the fan.

It is respectfully believed that "obvious to try" is not a proper basis for rejecting claims under 35 U.S.C. § 103. In fact, it is an improper basis because there is no suggestion or expressed expectation of success in the prior art that would have led one to perform the experimentation in the first place. Accordingly, any rejection based on the assertion that it would have been obvious to try a modification or combination of References will not support a case of prima facie obviousness.

Therefore, it is respectfully believed that Claim 7 overcomes this rejection under 35 U.S.C. § 103 and are patentable over Watt et al. in view of Herlitzius et al.

Claim 14 was rejected under 35 U.S.C. §103 as being obvious over Watt et al. Claim 14 depends from and contains all of the limitations of Claim 1, as amended. Therefore, Claim 14 overcomes Watt et al. in the same manner as Claim 1 above. Claim 14 discloses the entirely novel and unobvious concept of "sub-sieves" It is

respectfully believed that this is not a matter of adding additional sieves but to have sieves that perform a backup function to improve the quality of the grains harvested. This is a crucial and important function for quality control and is not a simple matter of adding more sieves. These sieves form a backup to the existing sieves to improve the quality and consistency of the grain. It provides its own unique feature to solve a significant problem of grain impurities not found in the prior art, which solves a significant problem.

It is respectfully believed that the solution to a problem, once known, may be obvious (although that is not the case here) but the recognition of the problem itself or of the source of the problem is not obvious. Eibel Process Co. v. Minnesota and Ontario Paper Co., 261 US 45 (1923). In this case, a significant problem of grain impurities is overcome in a manner not disclosed in the known prior art.

Therefore, it is respectfully believed that Claim 14 overcomes this rejection under 35 U.S.C. § 103 and are patentable over Watt et al.

Claim 15 was rejected under 35 U.S.C. §103 as being obvious over Watt et al. in view of Hofer (U.S. Patent No. 6,117,006). Claim 15 depends from and contains all of the limitations of Claim 1, as amended. Therefore, Claim 15 overcomes Watt et al. in the same manner as Claim 1 above. Although Hofer would appear to show a means for restricting adjustment ranges by predetermined limiting values, "Adjustment of the sieve of the combine is effected by an adjustment apparatus attached to the side wall of the combine on the outside surface." (Abstract, Lines 1-3). This is a mechanical adjustment mechanism and the sieve size is not automatically adjusted based on a load signal **as required** by Applicant's Claim 1. This is a unique feature not found in either reference and does not come into being by their combination. It is respectfully believed that what is obvious is only that which can be deduced as obvious by a logical step-by-step reasoning process from the premises furnished in the prior art. In this case, the premises involving an automatic adjustment of sieve widths based on load sensing information is wholly absent.

Therefore, it is respectfully believed that Claim 15 overcomes this rejection under 35 U.S.C. § 103 and are patentable over Watt et al in view of Hofer.

In view of the above, it is respectfully believed that all the presently submitted claims are allowable and a Formal Notice of Allowance is courteously solicited. If there are any questions or comments about this Response, please do not hesitate to contact the undersigned below.

Respectfully submitted,



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Version With Markings to Show Changes Made

In the Claims

Following is a marked-up version of claims 1, 3, 16 and 17 with all changes shown by conventional comparison (underling and bracketing).

1. (Once Amended) A device on a combine harvester incorporating a cleaning mechanism which comprises a sieve device including at least one sieve for cleaning the crop produced by [the] a threshing and separating mechanisms and at least one adjustable fan for forcing a blast of air through the sieve device, whereby the opening widths of the sieve device are adjustable by means of at least one adjusting member and/or the fan is adjustable mechanically, said combine harvester including at least one sensor whose measuring signal is dependent on the loading to which the combine harvester is subjected by the crop but which is independent of the setting of the cleaning mechanism, wherein the setting of the sieve opening width is effected automatically in dependence on the measuring signal from the sensor.

3. (Once Amended) A device on a combine harvester as in claim 1, wherein the sensor detects the amount of straw in [the] a feeder housing of the combine harvester.

16. (Once Amended) A device on a combine harvester incorporating a cleaning mechanism which comprises a sieve device having opening widths and including a sieve for cleaning a crop produced by [the] a threshing and separating mechanisms, an adjustable fan for forcing a blast of air through the sieve device, means for adjusting at least one of the opening widths of the sieve device and the fan speed, and a sensor having a measuring signal dependent on the loading to which the combine harvester is subjected by the crop but which is independent of the setting of the cleaning mechanism, wherein the setting of the sieve opening width is effected automatically in dependence on the measuring signal from the sensor.

17. (Once Amended) A combine harvester incorporating a cleaning mechanism which comprises a sieve for cleaning the crop produced by [the] a threshing and separating mechanisms, a fan for forcing a blast of air through the sieve device, an adjusting member for automatically adjusting the opening widths of the sieve device, at least one sensor having a test signal which is a measure of the loading to which the cleaning mechanism is subjected, whereby the adjusting of the sieve opening width is effected automatically only in dependence on the test signal from the sensor.